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RCA J20420YX1J OWNER'S MANUAL

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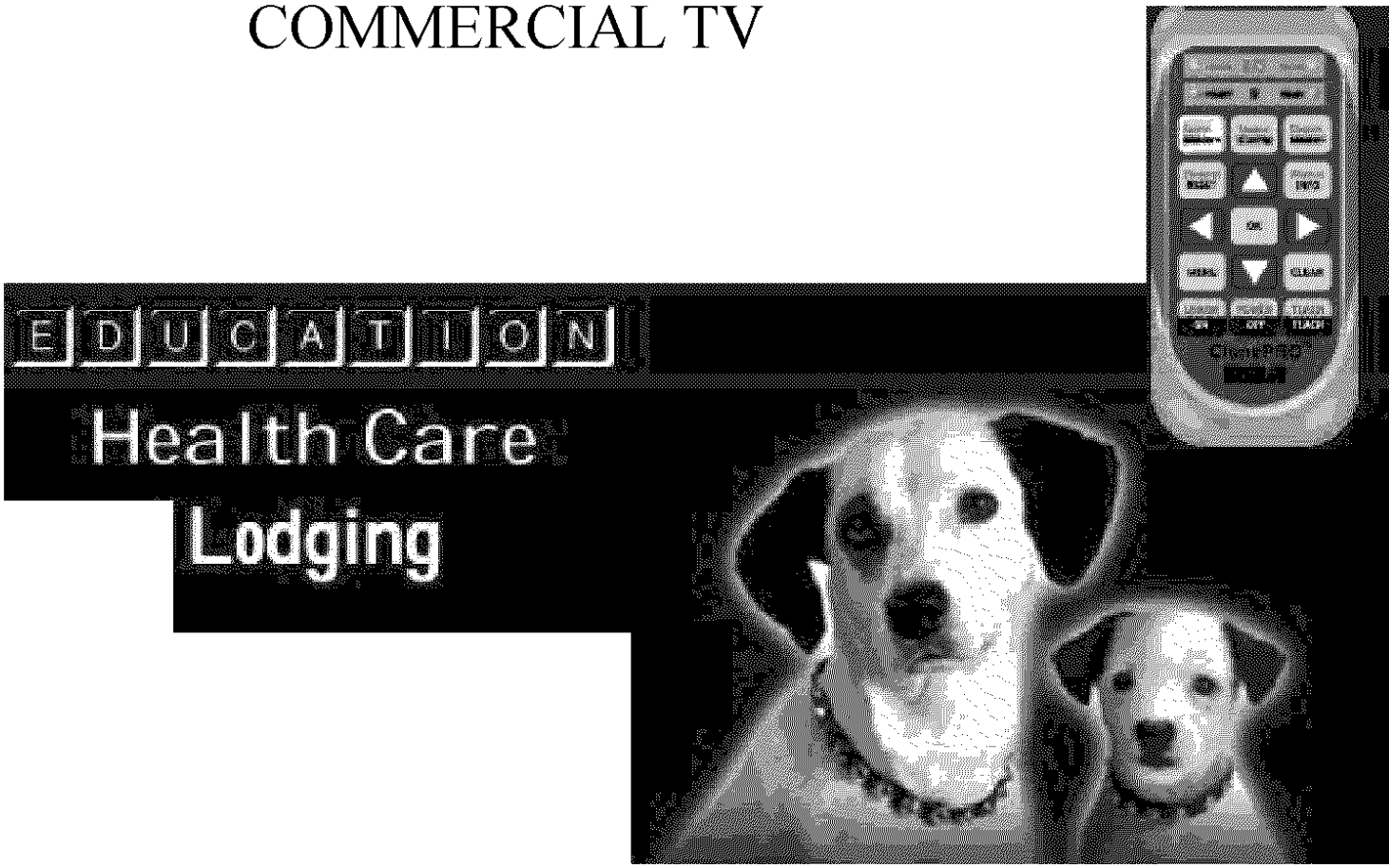
RCA

COMMERCIAL TV



FOREWORD

This publication will explain commercial TV, highlighting accessories associated with the commercial TV. This manual is designed to provide a basic understanding of commercial TV, Clone PRO™ programming, and how third party systems control the commercial TV.
For model specific information, please refer to the users manual or the service data.

Note: This publication is to be used only as a training aid. It is not meant to replace service data or the users manual. The Use and Care manual, and Electronic Service Information, contain specific information about parts, safety, alignment procedures and Use and Care. The information in this manual is as accurate as possible at the time of publication. Circuit designs and drawings are subject to change without notice.

SAFETY INFORMATION

CAUTION

Safety information is contained in the appropriate Thomson Service Data. All product safety requirements must be complied with. Anyone who defeat safety features or fails to perform safety checks may be liable for any resulting damages and may expose themselves and others to possible injury.

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RCA THOMSON MULTIMEDIA

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Notes

Commercial TV Intro

Commercial TV's differ from non-commercial TV's in many areas. One in particular is external control of the TV from third-party interactive systems. Today, most commercial applications incorporate a third-party control system, Master Antenna Television System (MATV), and some sort of interactivity.

Commercial TV's:

- have to be adaptable to the different types of third-party systems in use today.
- have two setup menus, a basic menu and a master menu. (The master menu allows more control of set operation and limits access to features commonly found on the basic menu of non-commercial TV's.)
- have an interface for a third-party controlling device.
- incorporate spill-resistant cabinets, (all grills, seams or other openingsare designed to minimize the likelihood of cleaning agents or spills entering the instrument and causing operational problems).
- incorporate integral mounting provisions, (mounting bosses on the bottom of the cabinet that allow affixing the instrument to existing mounts, brackets, and plates).
- have restricted access to channels and menus, front panel lockout, IR and wired cloning, and de-commercialization features. (De-commercialization prepares the commercial TV for after marked resale.)

RCA commercial TV's are indicated by the letter **J** at the beginning of the model number and GE commercial TV's are indicated by the letters **GH** in the model number. An example of a RCA commercial model number is **J32430**.

Commercial TV Application

Professional / Educational TV's are mainly used in situations that require televisions to always perform a particular function such as always turn on with the volume preset and on the same channel. Certain features and functions are enabled or disabled depending on the application. In this application controlling of the TV externally, although possible, is not common.

Lodging TV's are similar to Professional / Educational in that some features are disabled and in some cases none of the TV's controls are enabled. In a Lodging environment, the TV's are typically controlled by an external device or set-top box connected to the Digital Serial Communications Interface (DSCI) jack. When connected to the DSCI other devices can communicate with the TV sending it commands and getting front panel or remote commands back from the TV. With this interactivity, the user can send requests to the controller and do more than the non-commercial TV. For example: Pay-Per-View and room service can be requested by the customer using the on screen menu system. The service can then be billed directly to the room account. This type of interactivity can even include an itemized list of room charges and advance checkout for the customer.

Healthcare sets require additional features not typically associated with Pro/ED or Lodging. Healthcare sets require clear, 3-prong, 6-foot power cord. They are also used with the Patient Remote Pendant (PRP) that uses a standard stereo ¼ plug for controlling the TV. The pendant is a wired remote control used to control basic functions of the TV. There are two types of pendants; 1) Smart pendant and 2) "Dumb" pendant. Smart pendants control TV on/off, volume, and channel +/- much like the standard remote control does. The "dumb" pendant has channel up and on/off capabilities only. Both smart and dumb pendants can incorporate volume control of an external speaker and are hardwired to the TV.

Notes

Jack Panel

The jack panel is based on a particular application. Although specific applications require specific jack panel connections, any of the commercial TV's can be used in a commercial establishment. The first commercial TV's only had the Pendant connection. As commercial sets evolved, more interaction between user and the TV became apparent. The DSCI was added to provide this type of interactivity. Commercial TV's today have a pendant and or DSCI port for external control of the TV.

Note: *The DSCI port and Patient Remote Pendant are not used at the same time. Only one controlling device can be connected to the TV at a time.*

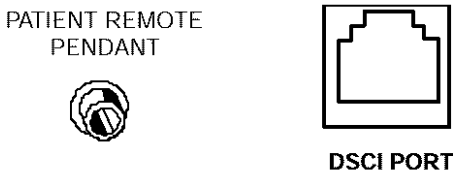


Figure 1-1; PRP and DSCI Connections

Healthcare Jack Panel

The healthcare jack panel uses the most basic of connections. There are three connection jacks but only two are used at any given time. The connections are:

1. Patient Remote Pendant
2. DSCI Port
3. Cable / Antenna

The Patient Remote Pendant uses a standard ¼ stereo plug that allows connection of a wired remote control unit called a pendant to operate the TV.

The DSCI port uses an eight pin phone jack style plug to connect the TV to a set-top box for controlling the TV and providing interactivity.

The Cable / Antenna connection is for the coax cable used to transmit the TV signal to the TV.

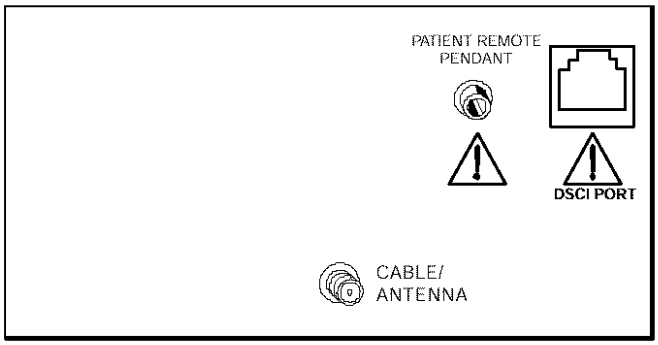


Figure 1-2; Healthcare Jack Panel (DSCI and Pendant Plug)

Professional / Educational / Lodging Jack Panel

Figures 1-3 and 1-4 can be found in professional, educational, or lodging applications. These applications typically do not use the Patient Remote Pendant jack. Both jack panels have the DSCI for controlling the TV by an external system. The other connections are features that are used in different applications.

The DSCI only jack panel has basic connections and is used in applications that require DSCI, cable / antenna, and possible video and audio input. It can also be used with a stereo system.

The connections are:

- **Video:** Composite video input from a VCR, DVD, camcorder, etc. connected to the TV.
- **Audio R/L/Mono:** Audio signal from a VCR, DVD, camcorder, etc. connected to the TV to provide audio input when using composite video.
- **R/L Out:** Audio signal out to a stereo system amplifier used when higher volumes levels are required.
- **Cable / Antenna** connection is for the coax cable used to transmit the TV signal to the TV.
- **DSCI port** uses an eight pin phone jack style plug to connect the TV to a set-top box for controlling the TV and providing interactivity.

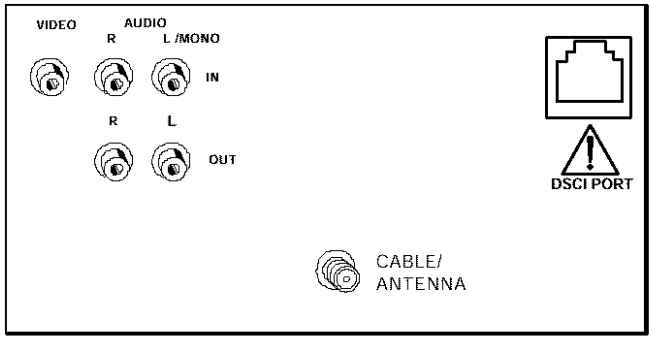


Figure 1-3; DSCI only

Display Series Jack Panel

The display series jack panel has all the connections of the DSCI only jack panel with two additional connections, PC input and S-Video. PC input is for connecting a personal computer to display computer graphics and text on the TV. S-Video is used when a higher quality video is needed. When using S-video, the corresponding audio in needs to be connected.

PC INPUT (Scan Converter)

The function of the built-in Scan Converter is to serve as an interface between a computer and the television. This allows the television to be used as a computer monitor. Using the PC INPUT connector, the TV can accept the computer signal and convert this signal into a standard NTSC Y/C signal for display on the TV screen. Computer signals with resolutions up to 2048 X 1536 @ 152 hertz vertical refresh are possible.

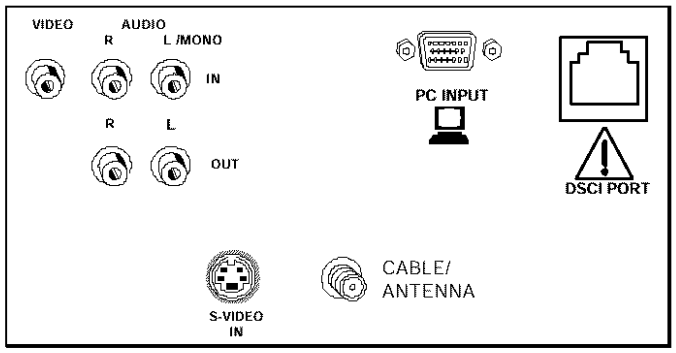


Figure 1-4; Display series DSCI

Notes

Remote Controls (Master & Basic)

A Master remote is different from a Basic remote in menu access only. Master remotes have special coding to access the hidden or master menus of the TV. Basic remotes can only access the basic menus that are allowed by setup of the master menu. To setup a commercial TV functions, the master remote or Clone PRO™ clone box needs to be used. No other remotes can access the master menus. When using the basic remote to make changes in the menu, each time the set is turned off, the changes will return to the default settings when powered on. Changes made by using the master remote will remain when power is removed from the TV. These settings can only be changed back by using a master remote or the Clone PRO™. Aside from the special coding used to access the master menu, the master remote is the same as the basic remote.

A Thomson universal remote is capable of many other operations that a basic remote is not, for instance; programmable to other brands of VCR, Cable/Sat, and audio systems. Like the basic remote, the universal can access the basic menu but is not capable of getting into the master menu. Universal remotes have the ability to control two Thomson TV's that are in the same vicinity but independant of each other. TV1 and TV2 buttons allow controlling two sets using one remote. See Master Menu section, on page 15, for TV1 and TV2 setup.

NOTE:

There are other remote hand units specific to some set-top boxes that appear to control the TV via IR but are doing so through the DSCI input on the back of the TV. These remotes are typically used where pay-per-view systems are in place and require a set-top box for control. These remotes do not have the coding to control the TV directly, but control the set-top box instead. The set-top box then controls the TV via the DSCI jack. Therefore, when the TV is not responding to remote commands, check the set using the Clone PRO™ clone box connected to the DSCI port. If the TV responds to the Clone PRO™, there is nothing wrong with the TV. (Functions of the Clone PRO™ may be limited by the setup of the TV and type of control the set-top box has. At a minimum, power on/off should work.)

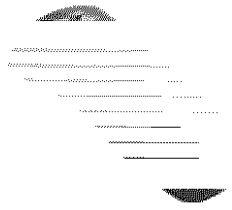


Figure 1-5; Master Remote (CRK17TD1) (244889)

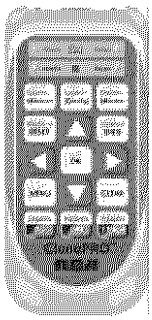


Figure 1-6; Clone PRO™ (CBX203)

Notes

Figure 1-7; Basic Users Remote (CRK17TC1) (244888)

Figure 1-8; Universal Remote (Basic) (CRK76TK1) (247437)

Note: *Numbers in ( ) are stock numbers for ordering remote.*

Basic Menu

The basic menus are accessed using the basic remote or the front panel **Menu** button. The menus that are available, depend on the restrictions set by the master user and the active input. For instance, if ***Basic Menu Access*** has been set to ***Disabled*** in the ***Access and Power Options*** menu, the basic menus will not be available.

Many of the changes made in the basic menu will revert to their master menu settings the next time the TV is turned on. Most all the basic menu items function the same as their master counter parts. Refer to the users manual for more detailed operation of the menu items that are different.

NOTE: *Some features, such as PC Video Input Controls, are not available unless that input has been selected prior to entering the menu. This holds true for both Basic and Master Menus.*

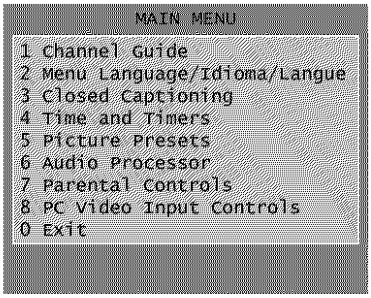


Figure 2-1; Main Menu (Basic)

Notes

Notes

Master Menus

By using a Master Remote or the Clone PRO™ the Master "Main Menu" can be accessed. The master menu sets up how the TV will operate for the end user. **It is important to be extremely familiar with the master menu and what each feature does.** Many times a problem that appears to be set related is actually improper setup or a misunderstanding of the menu item's function. Because of the numerous problems that can be associated with improper menu setup, only the function of each menu item will be explained.

The following section covers the master menu functions and what each does. Navigation through the menu is in order of display.

NOTE: *Some menu items may not be in all models.*

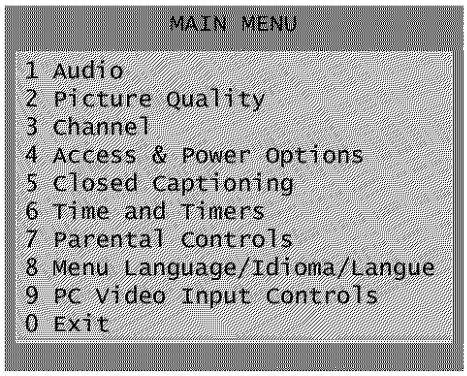


Figure 2-2; Main Menu

Audio Menu

Mute: Switches audio muting on / off.

Audio Levels: Displays the slider controls for adjusting the TV 's initial volume, maximum volume, balance, treble, and bass. Initial volume sets the TV 's volume to the specified level every time it is turned on. The maximum volume feature re-scales the volume control slider so that the far right position is always the maximum allowable volume (but not necessarily the maximum possible volume). The Balance feature fades between left and right speakers.

Audio Processor: Displays a choice list of available audio modes, which control the way sound comes through the speakers.

Expanded Stereo: Electronically "widens " sound from stereo broadcasts, stereo VCRs, digital satellite systems, DVD players, and Laser disc players for a fuller, more spacious sound. ***This choice will not be present if Fixed Output, Speakers Off is selected from Audio Output & Speakers.***

Stereo: Splits the incoming stereo audio signal into left and right channels. Most TV programs and recorded materials have stereo audio. The TV displays the word STEREO when tuned to a program that is broadcast in stereo.

Mono: Presents the sound in mono only (same signal sent to all speakers). Use this setting when receiving broadcasts with weak stereo signals.

Second Audio Program (SAP): Presents the program's audio in a second language, if one is available. The TV displays the word SAP when you tune to a program that is broadcast with SAP information. SAP audio is broadcast in mono. SAP is also used to broadcast a program's audio with descriptions of the video for the visually impaired.

Audio Output & Speakers: Displays a choice list that let's you turn the TV's internal speakers on or off and set the audio outputs to fixed-level or variable control level.

Variable Output, Speakers On: This setting turns the TV's speakers on and sets the variable output from the TV's audio output jacks, proportional to the volume setting.

Variable Output, Speakers Off: This setting turns the TV's speakers off and allows variable output from the TV's audio output jacks.

Fixed Output, Speakers Off: This setting turns the TV's speakers off and allows fixed output from the TV's audio output jacks to an external device such as a surround sound amplifier. ***When this feature is turned on, the TV's volume control, tone controls, Expanded Stereo, and mute are disabled.***

Volume Hold: This setting turns the TV's speakers on and sets the audio outputs proportional to the current volume setting. ***When this feature is turned on, mute and other volume controls are disabled.***

Sound Logic: Turning this feature on reduces the annoying blasts in volume during commercial breaks to create a more consistent audio output.

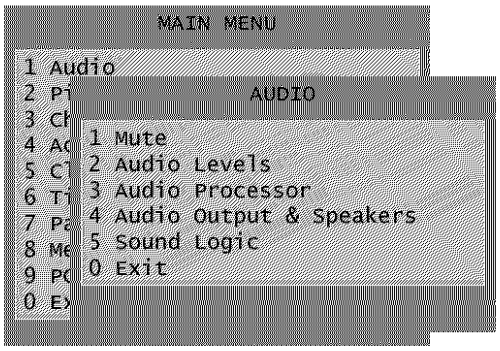


Figure 2-3; Audio Menu

Picture Quality Menu

The Picture Quality menu items allows appearance adjustment of the on-screen images. Pressing RESET on the remote control returns all Picture Quality menu settings to their factory defaults. Picture Adjustments displays the five-slider controls for adjusting the way the picture looks in the current video input source. ***(These settings can be set differently for each video input source.)***

Contrast: Adjusts the difference between the light and dark areas of the picture.

Color: Adjusts the richness of the color.

Tint: Adjusts the balance between the red and green levels.

Black Level: Adjusts the brightness of the picture.

Sharpness: Adjusts the crispness of edges in the picture.

When exiting the Picture Adjustments menu, the Save Custom Picture Preset choice list appears. Save the settings as a Custom Picture Preset that way the setting can be returned if someone changes the settings.

Picture Presets: Displays a choice list of four preset picture settings: Bright Lighting, Normal Lighting, Soft Lighting, or Custom Picture. ***Bright Lighting is the default and will be selected if the RESET or SKIP button is pressed while in this menu.***

Auto Color: Displays a choice list to turn on or off the feature that automatically corrects the color of the picture. (This is especially useful for tracking realistic flesh tone colors when switching from channel to channel.)

Color Warmth: Displays a list of three automatic color adjustments: **Cool** for a more blue palette of picture colors; **Normal** and **Warm** for a more red palette of picture colors. ***The warm setting corresponds to the NTSC standard of 6500 K.***

Picture Tilt: Screen sizes 32" and up have extra-large picture tubes, which make them vulnerable to the effects of the Earth's magnetic field. Picture Tilt compensates for this effect.

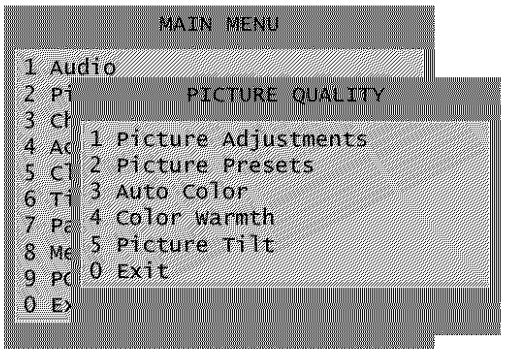


Figure 2-4; Picture Quality Menu

Channel Menu

Channel Guide: Displays the list of channels and their labels (if labeled) in the currently selected channel list.

Channel Selection: Allows the master user to set the initial channel and to select which of the three channel lists will be accessible to the basic user. If no initial channel is selected, the TV will select the last tuned channel when turned on. If Hold is selected, the user will not be able to select any channel other than the initial channel.

Signal Source: Displays a choice list that allows selection of the current signal source and turn muting and blanking on or off for weak signals.

UHF/VHF: Choose this if currently using an off-air antenna for TV signals.

Cable TV: Choose this if currently using cable or a cable box for TV signals.

Auto Channel Search: Tells the TV to search automatically for all the channels available through the antenna input. When the TV finds an active channel, it places it in the selected channel list; inactive channels (weak stations or channels with no signal at all) will be removed from that channel list.

List and Labels: Displays a control panel that allows editing of the three channel lists and an eight-character label for each channel. Follow the on-screen directions to customize channel lists and labels.

Note: ***Pressing RESET or SKIP in the Lists and Labels menu returns the highlighted field to its default status.***

Channel: Use the up and down arrows to scroll up and down through the channels available.

Lists A, B, and C: Use the up and down arrows to indicate what channel number is to be included in the highlighted channel list. Channels included in a list will be available to users when that list is active. ***Channels not included in the active list will not be accessible to users.***

Channel Label: Use the up and down arrows to enter a label of up to eight characters for each channel. Hold the button down to scroll quickly through the characters. Press RESET or SKIP to clear the currently highlighted label. *To prevent a channel number from displaying on the screen, select "#" as the eighth label character.*

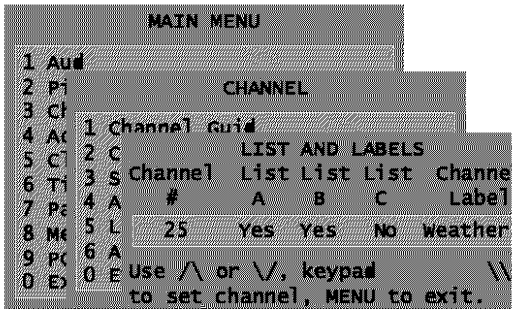

MAIN MENU
CHANNEL
LIST AND LABELS
Channel List List List Channe
A B C Label
25 Yes Yes No Weather
Use /\ or \/, keypad
to set channel, MENU to exit.

Figure 2-5; Picture Quality Menu

Auto Tuning: Displays a choice list that allows setup of the TV to automatically tune to the correct input channel when pressing the component button (VCR1, DVD, VCR2, or SAT) on a universal remote.

The component button choices are:

- **VCR1:** Displays a choice list that lets you select the channel that the TV tunes to when you press the VCR1 button.
- **VCR2:** Displays a choice list that lets you select the channel that the TV tunes to when you press the VCR2 button.
- **DVD:** Displays a choice list that lets you select the channel that the TV tunes to when you press the DVD button.
- **AUX:** Displays a choice list that lets you select the channel that the TV tunes to when you press the AUX button.
- **SAT:** Displays a choice list that lets you select the channel that the TV tunes to when you press the SAT (or SAT •CABLE) button.

The input channel choices are: (not all choices are available on all models)

- **Ch 3:** Choose this if the component is connected to the antenna jack on the back of the TV, and want the TV to tune to channel 3 when the specified component button is pressed. Make sure the component's Ch 3/4 switch is set to
- **Ch 4:** Choose this if the component is connected to the antenna jack on the back of the TV, and want the TV to tune to channel 4 when the specified component button is pressed. Make sure the component's Ch 3/4 switch is set to channel 4.
- **VID:** Choose this if the component is connected to the Audio and Video In jacks on the back of the TV and want the TV to tune to the VID input channel when the specified component button is pressed.
- **SVID:** Choose this if the component is connected to the S-VIDEO jack on the back of the TV and want the TV to tune to the SVID input channel when the specified component button is pressed.
- **S-VHS or Super-VHS:** This is an extended format of VHS and improves the picture quality of the signal passing through the S-VIDEO input. Make sure to also connect audio cables in order to get sound when using S-Video.

- **PC:** Choose this if the component is connected to the PC INPUT jack on the back of the TV and want the TV to tune to the PC input channel when the specified component button is pressed. Figure 2-6; Channel Menu

Figure 2-6; Channel Menu

Access & Power Options

This control panel allows the master user to specify which features and functions basic users will be able to access. Yellow and green color-coding shows each item's status:

- **Yellow:** default setting.
- **Green:** change from default setting or un-set password.

Remote Configuration: This feature tells the TV under what circumstances to respond to remote control commands.

TV1: TV will only respond to a remote in TV1 mode.

TV1 or TV2: TV will respond if the remote is in either mode.

TV2: TV will only respond to a remote in TV2 mode.

Disabled: TV will not respond to a remote at all, except MENU from the master remote. Once TV1 or TV2 status has been assigned to the TVs, the remote will have to be setup as well.

On a master remote:

1. Point the remote at the TV1 TV.
2. Simultaneously press and hold the SYSTEM and 1 buttons.
3. After three seconds, release the buttons. The TV1 TV should now respond to the remote.
4. To control a TV2 TV, simply repeat the process using the 2 button and a TV2 TV.

On a universal remote:

1. Point the remote at the TV1 TV.
2. Press the TV1 button to put the remote in TV1 mode.
3. To control a TV2 TV, simply repeat the process using the TV2 button and a TV2 TV.

Basic Menu Access: This feature tells the TV to either enable or disable the basic menu. When the basic menu is disabled, users cannot access menus through the basic remote or the front panel.

TV Power Configuration: This feature determines whether the TV can be turned on and off with the POWER button on the remote or the front panel.

Switched: The TV can be turned on or off; the Energy Saver can be enabled.

Remote: The TV cannot be turned on or off with the front panel.

Always: The TV cannot be turned on or off; all Energy Saver settings will be ignored.

Energy Saver Setting: When enabled, this feature will turn the TV off after a specified period of inactivity (no remote or front panel button presses). When disabled, the TV will not turn off automatically. If *TV Power Configuration* is set to *Always*, Energy Saver Settings will be ignored.

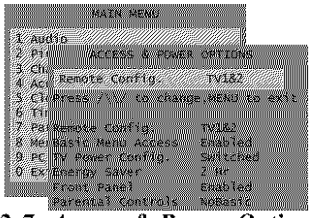


Figure 2-7; Access & Power Options Menu

Closed Captioned Menu

Many programs are encoded with closed caption information, which displays the audio portion of a program as text on the TV screen. Closed caption is not available on all channels at all times. It only appears on specific programs encoded with closed caption information. When a program is closed captioned the letters "CC " are displayed in the Status Display.

Closed-Caption Display

The Closed-Caption Display and PIP Closed-Caption Display select which one will have Closed Caption displayed. In the PIP Closed-Caption Display, selecting the *Alternate with PIP button* choice results in the following sequence when the PIP button is pressed:

- PIP without closed caption
- PIP with closed caption
- No PIP

Closed-Caption Modes

There are eight closed-captioned modes, including four text modes.

To set the Closed-Caption Mode for the main screen or PIP window:

1. Select *Closed Caption* from the Main menu.
2. Highlight *Closed-Caption Mode* or *PIP Closed-Caption*

3. Point to your choice and press OK to select it and return to the Closed Caption menu.

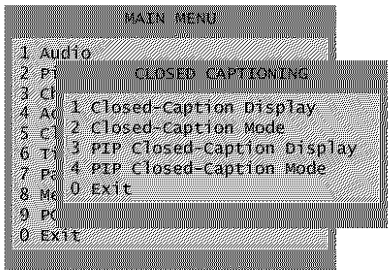


Figure 2-8; Closed Caption Menu

Time and Timers Menu

Current Time: Enters the current time. Follow the on-screen directions through the steps needed to set the time. This feature is accessible by basic users only if *Time Configuration* is set to *Basic* (unless an invalid time is received).

Sleep Timer: Selects the amount of time the TV is on before it shuts itself off. One minute before the scheduled shut off, a warning will appear on the screen indicating the Sleep Timer 's status. When this message is present, any remote or front panel button press will turn the Sleep Timer off. The Sleep Timer can also be accessed directly using the SLEEP button on the remote.

Schedule: Sets up a schedule for turning the TV on and off automatically. Follow the on-screen directions through the steps needed to set the schedule.

Note: *Pressing the RESET or SKIP button while in the Schedule control panel clears both the start and stop times and selects Inactive in the Schedule Status field.*

Time Configuration: This control panel allows control of several time-related functions.

Schedule Recurrence: Selects the type of scheduling function the user will have:

- ***Disabled:*** Prevents the basic user from viewing or changing the Schedule menu item.
- ***Recurring:*** This schedule will be in effect indefinitely; both the master and basic user can view and change the Schedule menu item.
- ***One-time:*** This schedule will only be active once unless reset. Both the master and basic user can view and change the schedule menu item.

Set Time Access: Selects who is able to change the current time:

- ***Disabled:*** Prevents the basic user from viewing or changing the current time menu item unless an invalid time is received. The basic user will still be able to view the current time in the Status Display if a time has been set.
- ***Automatic:*** The time is automatically set by using a time-set channel. Basic users can view the current time menu item, but cannot change it.
- ***Basic:*** Both the master and basic user can view and change the current time menu item.

Daylight Savings: When on, tells the TV to automatically adjust for daylight savings time.

Time Offset: Set an offset time (from+12 to -12 hours) from the UTC (Universal Time, Coordinated).

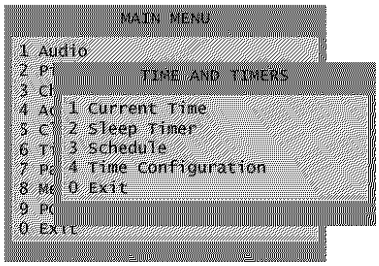


Figure 2-9; Time And Timers Menu

Parental Controls Menu

The Parental Controls menu allows programming of the TV so that children cannot see certain programs, channels, or use the front panel controls.

The choices in the Parental Controls menu involve software inside the TV (dubbed V-Chip), which allows blocking of TV programs and movies containing violence, sex, or other content not intended for children. Programs can be unblocked by entering a password. Note the default state is off and basic users have no access to Parental Controls. When turned "on," the software reads a code that most broadcasters send with programs. That code tells the software the program 's age-based rating (TV-MA, TV-14, etc.) and content themes (Violence (V), Adult Language (L), etc.). If the rating or content themes that the program contains are blocked, the message "**This channel is not approved for viewing**" will be displayed. Broadcasters are not required to provide content themes, so programs received with no content themes will only be blocked if their age-based rating is blocked. Movies that have been given a rating of "Not Rated," and programs that are considered "un-rated " because no code has been sent by the broadcaster, can be blocked.

Locked/Unlocked

Selecting this option allows lock and unlock of parental control settings using a password. Follow the on-screen instructions to lock or unlock blocked programming (the default password is 5625). If parental controls are not locked, none of the settings for V-Chip, Channel Block, or Front Panel Block will take effect. Master users can enter a new password at any time through the *Password* menu option.

V-Chip Movie Rating Limit

Movie rating limits are set by blocking movies rated above a specified level. To access the V-Chip Movie Rating Limit menu:

1. Press MENU on the remote control (the TV Main menu appears).
2. Select Parental Controls.
3. Select V-Chip Movie Rating Limit.

Blocking Movie Ratings

To allow viewing of movies that have a PG rating and lower (in other words, movies rated PG and G), and automatically block all movies with higher ratings, do the following:

1. Highlight the Rating field, and press the up and down arrows to find the rating that is the lowest rating you do not want the child to watch.
2. Use the right arrow to highlight the Rating Status field. Press the up and down arrows to change the button from *View* to *Block.* All higher ratings ' *View* buttons will automatically change to *Block.*
3. Press OK to return to the menu or exit the screen.
4. Parental Controls must be locked so the movie rating limits will take effect.

Viewing Movie Ratings

After movie ratings are blocked, there is the option of changing some of the Rating Status fields back to *Vie*w.

1. Highlight the Rating field, and press the up and down arrows to find the rating to view.
2. Use the right arrow to highlight the Rating Status field. Press the up and down arrows to change the button from *Block* (red) to *View* (green).
3. Press MENU or OK to exit the screen, and be sure parental controls are locked.

V-Chip TV Rating Limit

The V-Chip TV Rating Limit lets the user decide what TV programs can and cannot be viewed.

To set TV programming limits:

1. Choose *Parental Controls* from the Main menu. If Parental Controls have previously been locked, the correct password must be entered. If they are not locked, a message that the limits will not be effective until you lock Parental Controls is displayed.
2. Press MENU to continue.
3. Highlight and select *V-Chip TV Rating Limit*.
4. Once on the V-Chip TV Rating Limit screen, use the arrows and OK on the remote to change the status of a TV program rating or content theme from *View* to *Block*.

Blocking Age-Based Ratings

This will automatically block all program ratings above a specified age-based rating level. For example, if wanting to view a TV-G rating and lower program (in other words, to only watch TV-G, TV-Y7, and TV-Y), then all programming with higher ratings need to be blocked.

To block programs with higher ratings:

1. First, determine the highest level rating allowed for viewing.
2. Use the left and right arrows to highlight the Rating field.
3. Use the up and down arrows on the remote to scroll through the age-based rating limits. Keep scrolling until the rating corresponding with the highest viewable rating appears. In the example discussed above, scroll through the choices in the Rating field until TV-PG appears, since the highest rating is TV-G.
4. Use the right arrow to move the yellow highlight to the Rating Status field.
5. Press the up or down arrow to toggle between *View* and *Block*. The status for the rating listed to the left and all higher ratings automatically changes to *Block* (*B,* red).
6. Press MENU or OK on the remote to return to the menu or exit the screen.
7. Select Lock Parental Controls from the Parental Controls menu. Enter a password, and if you have not already set your password, you will be prompted to enter it again to confirm.

Viewing Age-Based Ratings

Once the age-based ratings are blocked, there is the option of changing some of the ratings back to *View*.

1. Determine which blocked rating you want to *view*.
2. Use the left and right arrows to highlight the Rating field.
3. Use the up and down arrows to select the rating whose status is *Block*.
4. Press the right arrow to move the yellow highlight to the rating status field.
5. Press the up or down arrows to toggle between *View* and *Block*.

Blocking Specific Content Themes

This will block programs based on their content. (Content is represented by the D L S V and *FV* on the screen. When blocking a content theme for a particular rating, the content theme for higher rated programs is automatically blocked. For example, if blocking programs that have adult language (L) rated TV-PG or higher, then block TV-PG.

To block program content:

1. Determine the highest level of content to be viewed.
2. Use the left and right arrows to highlight the Rating field.
3. Use the up and down arrows on the remote to scroll through the age-based ratings until the rating that corresponds with the highest content to be viewed appears.
4. Press the right arrow to move the highlight to the field corresponding with the content theme to block out.
5. Press the up or down arrow to change content status from *V* to B. All higher ratings ' content theme will automatically change to B.
6. Press MENU or OK to return to the menu or exit the screen.

Viewing Specific Content Themes

Once the specific Content Themes are blocked, there is the option of going back and changing some of the Content Themes back to *View* (V):

1. Determine the content themes to change to *View* (V).
2. Use the left and right arrows to highlight the Rating field.
3. Use the up and down arrows to scroll through the age-based ratings until the rating whose content theme to change appears.

4. Press the right arrow to move the yellow highlight to a particular content theme status, such as the *B* under language (L) corresponding with TV-14.

5. Press the up or down arrows to change its status back to V. This allows programs with TV-14 adult language content to be viewed, but not programs with TV-PG or TV-MA language content.

V-Chip Un-rated Program Block

Selecting this option determines if programs that the V-Chip recognizes as "un-rated " can be viewed. Note that "un-rated " TV programs may include news, sports, political, religious, local and weather programs, emergency bulletins, and public announcements. Also, the first few seconds of a rated program may be blocked due to a brief delay in the transmission of the rating.

- **View:** All un-rated programs are available.
- **Block:** No un-rated programs are available.

Channel Block

Selecting this option determines what channels can be viewed.
View: Makes the selected channel viewable.
Block: The front panel and remote control CH ^/v (channel up and down) buttons will tune only to channels that are marked as *View*. The remote will still tune to the blocked channel if using the digits to access the channel, but the audio will be muted and the video will be replaced with the Channel Block Warning Display.

This channel has not been

approved for viewing.

Change channel or
press SELECT/OK to enter password

and temporarily deactivate

Parental Controls.

Password

Selecting this option sets up a Parental Controls password (the default password is 5625 —"lock " on a telephone-style keypad). Master users can enter a new password without being prompted for the old one. Basic users must enter the old password before they can create a new one.

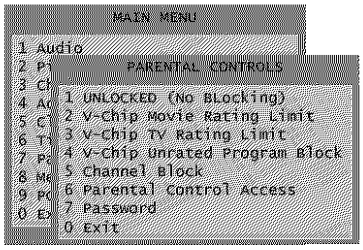


Figure 2-10; Parental Controls Menu

Menu Language

The Menu Language selection affects only the menus. *It does not change the audio language*. The menu language choices are: *English Spanish* or *French.*

Figure 2-11; Menu Language Menu

PC Video Input Controls

This menu item will appear if the TV PC input is selected. There are four ways of selecting the PC input:

1. Selecting the PC input from the active channel list using the CH +/-buttons.
2. Pressing the WHO •INPUT button, until **PC INPUT** is selected.
3. Auto tuning with the remote. (See Auto Tuning on page 13.)
4. Selecting channel 128.

Make sure the TV is connected to a PC or similar device before selecting PC Video Input Controls.

Zooming:

To enlarge or reduce the on-screen image by zooming.

The OK button toggles the zoom options:

- 1x displays the image at full size
- 2x displays the image at twice its full size

Panning:

When "zoomed in " to 2x, the viewable image will be larger than can be shown on the screen at one time. Panning with the Arrow buttons allows the user to view different portions of these enlarged images. Pan up to view portions of the image currently above the screen, pan left to view portions of the image currently to the left of the screen, and so on.

Freezing and Unfreezing:

This functions like a "Pause " button with a VCR. The word FREEZE will be displayed on the screen until this function is deactivated.

Using Video Settings

Video settings are changed by pressing the FORWARD (FF) or REVERSE (REW) buttons, which simply take you through the presets in different orders. The Video Presets are:

1. Text &Graphics (Default)– Choose this if your PC input image contains both text and graphics.
2. Text on Bright Bkgrd – Choose this if your PC input image contains dark text on a light background.
3. Text on Dark Bkgrd – Choose this if your PC input image contains light text on a dark background.
4. Graphics Optimized – Choose this if your PC input image contains mainly graphics or if graphics are more important than text.

Resetting

Pressing RESET simply resets zooming, panning, freezing and video settings to their defaults.

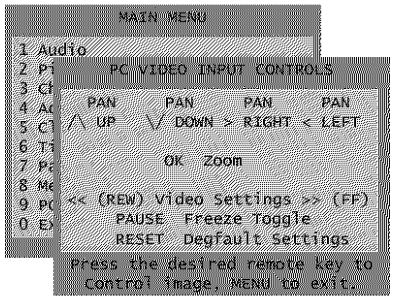


Figure 2-12; PC Video Input Controls Menu

A feature of the master menu is when the setup is complete the settings are stored until changed later. Even in the event of power failure, the changes are still there. When using the basic remote to make changes in the menu, each time the set is turned off those changes will be lost and return to the default settings when powered back on.

Notes

External Control of the TV

In most applications the commercial TV is controlled by a third-party device hard wired to the set. This is accomplished in <u>one</u> of two ways.

1. Digital Serial Communication Interface (DSCI)
2. Patient Remote Pendant plug (PRP)

The DSCI provides more control of the TV then the Pendant. The DSCI uses serial communication, IR communication and is capable of two-way communication. It also provides +12Vdc power for third-party use. The PRP is used primarily in Healthcare applications.

Interactive Systems (Set-Top Boxes)

There are several different interactive systems available today. The most common ones are: On Command Video and Lodgenet. Most use a set-top box to provide interactivity. When connected to the DSCI, the set-top box can provide pay-per-view movies, media-retrieval and control, patient and staff education, guest services, and other automated control of the TV. The fundamental equipment required for an interactive system includes; in-room hardware (set-top box), head-end (MATV), and communication system. The set-top box is hardwired to the TV's DSCI jack. See MCR Module Connections on page 27 for a pin out of the DSCI.

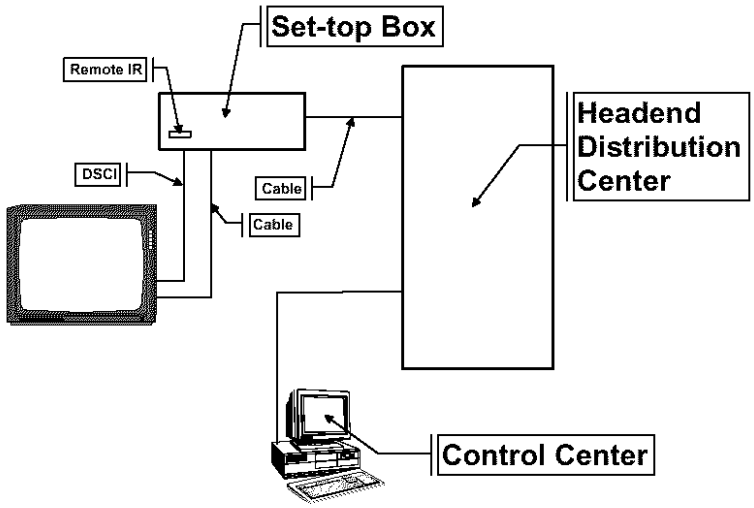


Figure 3-1; Set-top Box Block Diagram

Patient Remote Pendant (PRP)

There are two types of wired Patient Remote Pendants, "dumb" and "smart". A "dumb" pendant is nothing more than a switch closure between two contacts. On healthcare TV's this contact closure tells the set to channel up once for each key press. In the event the set is powered off, the first key press will turn on the set and each preceding key press changes the channel. Once the last channel has been reached, the next key press will turn off the set. There is no other interaction between user and TV with a dumb pendant.

Using a smart pendant provides the user with more control of basic functions like volume up and down, channel up and down, and on/ off. The smart pendant uses data pulses similar to a remote control. Both smart and dumb use a standard stereo ¼" plug to connect to the TV for communication and can have audio out to a pendant speaker. Some pendants have mechanical volume controls to adjust audio level of the pendant speaker. See MCR Module Connections on page 28 for a pin out of the PRP.

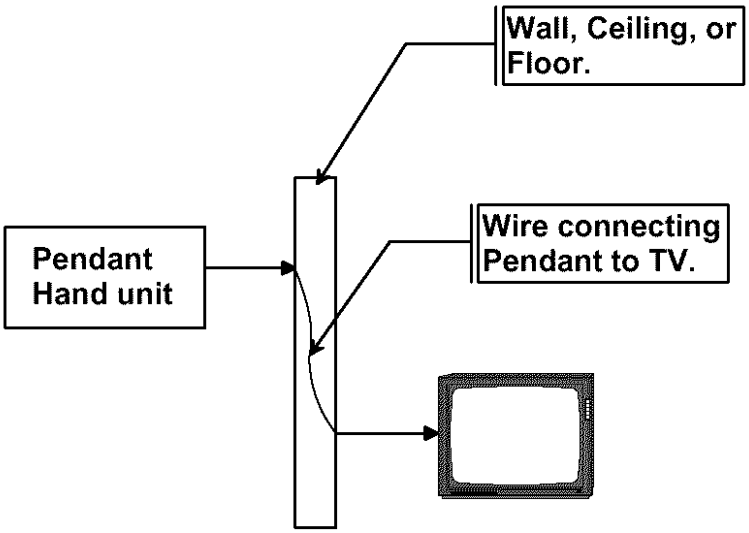


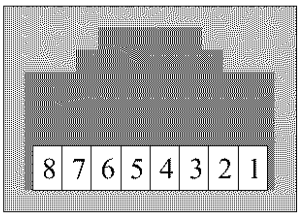
Figure 3-2; Pendant Block Diagram

MCR Module Connections

The commercial TV uses an MCR (remote-control module) for third-party connection and control. The MCR module has one and/or two control jacks on it.

1. Digital Serial Communication Interface (DSCI)
2. Patient Remote Pendant plug (PRP)

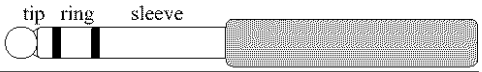
The type of commercial installation determines what MCR module or connections are available. All MCR modules have the DSCI, but only the healthcare has a PRP. The DSCI has serial communication, infrared (IR) remote output, and is capable of two-way data transfer for complete monitoring and control of the television. It also provides +12Vdc power for third-party devices. The PRP, used with Healthcare applications, has limited interactivity.



Function	DSCI Pin #
Without serial data: Channel list slection	1
asyschronous serial data out	2
asynchronous serial data in	3
12V dc power out	4
reserved	5
Ground	6
detected IR signal output	7
auxiliary output (External hardware control ie. A/V switching)	8

Figure 4-1; DSCI Pin Identification

Notes



Function	PRP Pin #
Audio Signal	**Tip**
Control Signal	**Ring**
Ground	**Sleeve**

Figure 4-2; Pendant Plug Pin Identification

Clone PRO™ (CBX-203)

The Clone PRO™ clone box is a self contained, battery operated, microprocessor controlled device used to facilitate the programming process for commercial TV. Because the commercial TV has a wide range of features and options, programming of multiple sets can be time consuming. In most commercial applications there maybe several to hundreds of sets that all need to be setup the same way; this is where the Clone PRO™ helps. With a learn / teach feature, the Clone PRO™ can program several sets in less time than someone going into each sets menu and setting them up manually. By programming one set and using the Clone PRO™ to learn the TV's setup, the other televisions in the establishment can then be programmed using the teach function of the Clone PRO™.

Additionally, the Clone PRO™ can be utilized as a tool to:

1. Clear the television's memory.
2. Prevent unauthorized and unsupervised programming.
3. Allow or disallow front panel programming.
4. Commercialize or de-commercialize a set.
5. Set legacy bit. (For OnCommand operation)
6. Troubleshoot the MCR board communication.

There are two ways the Clone PRO™ can accomplish programming a set. 1) Digital Serial Communications Interface (DSCI) "SmartPlug", and 2) Wireless remote operation. When using DSCI ("SmartPlug"), the Clone PRO™ is physically connected to the TV via a standard (1 to 1, non-flipped) 8-conductor computer-network cable. When using IR the Clone PRO™ needs to be pointed (line of sight) at the IR receiver of the TV.

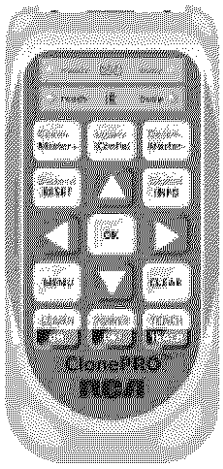


Figure 5-1; Clone PRO™ (CBX203)

Switches and Indicators
The Clone PRO™ uses a number of switches and indicators to select, initiate, and verify the process.

DSCI mode: (Green Color)

"**ready** LED"
Indicates the Clone PRO™ is properly connected to the TV via DSCI port and is ready for commands.

"**busy** LED"
Indicates data transfer to and/or from the Clone PRO™.

"**Comm.**"
Commercializes a de-commercialized TV.

"**Legacy**"
Sets legacy bit for OnCommand operation.

"**Decom.**"
De-commercializes TV for after market resale of commercial TV

"**[Factory]**"
Pressing and holding this button for a few seconds resets the TV to factory defaults. (This will not Commercialize a De-commercialized set)

"**[Status]**"
Pressing and holding this button for a few seconds brings up a display showing the settings stored in the Clone PRO™ and the TV.

"**RESET, INFO, OK, MENU, CLEAR, and Arrow Buttons**"
These buttons perform their expected function as if they were on a master remote.

"**LEARN**"
This begins the process of learning the settings from a television that has been configured as desired for the particular application.

"**POWER**"
Toggles the TV on and off in the DSCI mode.

"**TEACH**"
This begins the process of teaching the setting stored in the Clone PRO™ to the television to which it is connected.

IR mode: (Red Color)

"**ready** LED"
Indicates the Clone PRO™ is powered on and in the IR mode.

"**busy** LED"
Indicates data transfer from the Clone PRO™ via IR.

"**Master +**" and "**Master –**"
These enable and disable, respectively, access to the TV's master menus for configuration.

"**Config**"
Allows or disallows front panel programming.

"**RESET, INFO, OK, MENU, CLEAR, and Arrow Buttons**"
These buttons perform their expected function as if they were on a master remote.

"**ON**"
Turns on the Clone PRO™ and puts it in the IR mode.

"**OFF**"
Turns off the TV.

"**TEACH**"
This begins the process of teaching the setting stored in the Clone PRO™ to the television.

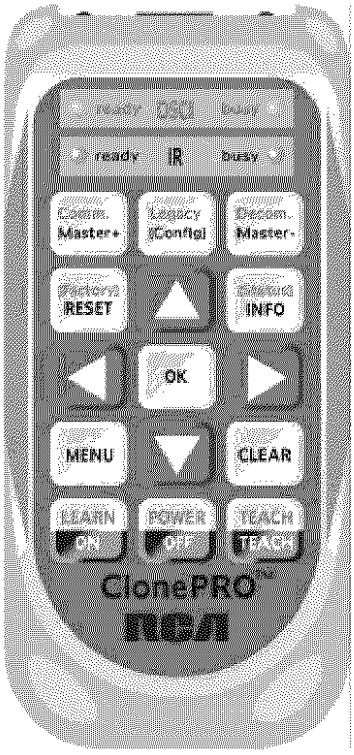


Figure 5-2; Clone PRO™

Notes

Clone PRO™ Operation

Receiver to Clone PRO™ (LEARN)
Once a television has been programmed, connect the DSCI cable from the Clone PRO™ to the television (Jack on back of TV). With the television on or off, push the Learn switch. The "busy" LED will turn on during the programming cycle and turn off when finished. If the television is on, an on-screen display will indicated the process as well. This completes the CBX-203 learning process.

Clone PRO™ to Receiver (TEACH)
In the Teach mode, the Clone PRO™ has two ways of transmitting the data to program the television. IR is the easiest and requires no physical connection between the Clone PRO™ and the TV.

Wired Clone PRO™ to Receiver (TEACH)
With AC power applied and the television turned on or off, connect the Clone PRO™ to the television's interface connector (DSCI Port) with an appropriate connecting cable. Push the Teach switch. The busy LED should light indicating the program cycle has started. When finished the busy LED will turn off indicating the program cycle is complete. If the television is on, an on-screen display will indicated the process as well.

Wireless Clone PRO™ to Receiver (TEACH)
Hold the Clone PRO™ approximately two to three feet in front of the television. Point the Clone PRO™ at the IR window on the front of the TV and push the ON switch. Press the Teach switch and the busy LED should light indicating the program cycle has started. When finished the busy LED will turn off indicating the program cycle is complete. An on-screen display will indicated the process as well.

Clone PRO™ Hints

- When using the Clone PRO™ in the IR mode, the Clone PRO™ will time out after about 30 sec. if no keys are pressed.
- When connected to the television, via the DSCI jack, the Clone PRO™ gets it's power from the TV. There is no need for the battery when using the DSCI connection.
- If the Clone PRO™ is in the IR mode (IR ready LED is lit) and the DSCI is then used to connect to the TV, the Clone PRO™ will not function until the IR mode times out. **NOTE:** *The IR ready LED will go out and the green DSCI ready LED will be lit, but any key press on the Clone PRO™ and the IR LED busy will light indicating the Clone PRO™ is still in the IR mode.*
- If the Clone PRO™ locks up and no functions seem to be working, the DSCI cable and the battery need to be disconnected for 3-5 minutes to reset the Clone PRO™.

- Never disconnect the DSCI cable while the Clone PRO™ is in the process of Learning or Teaching.
- Always clone a working set first then re-clone the set suspected of having programming errors. (Learn and Teach function on the Clone PRO™)
- When using the DSCI option, the TV can be turned on of off. If the TV is on, there is on-screen display information indicating the process being preformed.
- When using the IR (TEACH) function, the TV needs to be turned on.

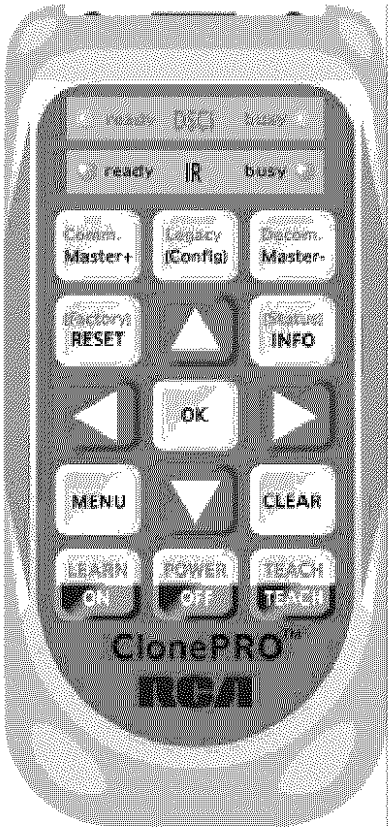


Figure 5-3; Clone PRO™

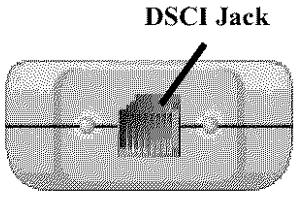


Figure 5-4; Clone PRO™ DSCI and IR End View

Troubleshooting Hints and Tips

As with any troubleshooting a logical thought process is required to accomplish the task. The first thing when dealing with commercial TV is to check setup menu for proper setup. A short cut method to determine if the set has a setup problem is to take a working TV set and learn using the Clone PRO™. Then using the Clone PRO™, teach the set in question. This procedure will insure the two sets are setup the same.

The Clone PRO™ is a useful tool in troubleshooting the commercial TV. With a complete understanding of how the Clone PRO™ works, one can determine if the TV or the system it is hooked to is the problem. Using the DSCI communication port as the test point, hook up the Clone PRO™ using the cable supplied and check for proper communication by either teaching or learning the set. The green busy and ready LED's indicate data communication. Turning on the set and channel change are another indication that the DSCI is working.

Patient Remote Pendant can be tested by taking a known working pendant and connecting it directly to the back of the TV. If the set works, check the wiring from the pendant to the TV. The PRP is a simple three-wire connection but if wired wrong it will not work.

TV will not turn on

- Check to make sure it is plugged in.
- Check the wall receptacle (or extension cord) to make sure it is "live " by plugging in something else.
- Check batteries in remote control.
- Insure remote control is aimed at the remote sensor on the TV.
- TV power or remote configurations may be preventing this. Use a master remote control to change menu settings.

TV turns on or off unexpectedly

- The Scheduled Off or Scheduled On function may have been activated in the Time and Timers menu.
- The Sleep Timer or Energy Saver function may have turned the TV off. Check menu setting under Sleep Timer and Energy Saver. Note: Sleep timer can be re-set by unplugging the TV, wait 5 minutes and plug it back in.

No picture or bad reception

- Try another channel.
- Check antenna connections.
- If watching video from an external component, make sure the component is connected to the input jacks and the component is turned on.
- Press **RESET**, in case the picture controls are set too low. (If brightness and contrast are set to their minimum, the

- If using a VCR (connected only through antenna input), make sure TV is tuned to channel 3 or 4 —the same as CH3/4 switch on VCR.
- If using a VCR, check to make sure the TV/VCR button on the VCR is in the correct "mode."
- Weak Signal Muting and Blanking may be on (from the Main menu, select Channel Menu, then Signal Source)
- Try adjusting sharpness to improve weak signals (from the Main menu, select *Picture Quality* then *Picture Adjustments*.

Black box appears on the screen

- Closed Captioning may be turned on and in text mode. Check the Closed-Caption Display control panel by pressing CC on the remote control or through the Main menu.

No sound, picture okay

- Be sure sound is not muted. Try pressing the VOL ^ (up) button to restore sound.
- Make sure speakers are turned on. Check, the Audio Output and Speakers control panel in the Audio menu.
- If using an S-VHS connection, remember to also connect the component 's L and R AUDIO OUT jacks to the TV 's L and R INPUT jacks.
- Check Maximum Volume seting in the Audio Levels control panel in the Audio menu.

Noisy stereo reception

- Weak station or poor reception. Select *Mono* in the Audio Processor control panel of the Audio menu.

Problems with remote

- Operation of certain remote control buttons might be restricted by master menu settings.
- Make sure nothing is between the remote and the remote sensor that could block the signal.
- Point the remote directly at the device you are trying to control.
- If using a remote with component buttons, make sure remote is in the TV mode. Press the TV button so remote will control the TV. See also the Input signal problems description later in this section.
- Wrong configuration (TV1 or TV2) for that TV. Check the *Remote Configurations* setting in the Access and Power Options menu. See the "Master Menus " section for more details.
- Check batteries in remote, dead or installed incorrectly. Try replacing batteries. (If using a programmable remote and the batteries are remove, the remote will have to reprogramed to control other components.)
- Remove batteries and hold the 1 button for at least 60 seconds to drain the microprocessor inside the remote. Release the 1 button, replace the batteries, and (if necessary) reprogram the remote.

Can't select certain channel

- ***Channel may be blocked or not approved in the Parental Controls menu.***
- ***Channels not in the current channel list cannot be accessed except through the master Channel menu.***
- If using a VCR, check to make sure the TV/VCR button on the VCR is in the correct "mode."

Input signal problems

- Make sure that the input channel choice in the Auto Tuning menu matches the component's physical connection. For example, if you have set *VCR1* to *CH4* in Auto Tuning, but the VCR is connected by Audio/Video cables or an S-Video cable, you will see normal channel 4 programming when the VCR1 button is pressed. See the Auto Tuning description under Channel Menu in the "Master Menus " section for further instruction.

Menu problems

- ***Menu access may be blocked by clone box programming.***
- ***The Energy Saver settings will not work if TV Power Config. is set to Always in the Access and Power Options menu.***
- ***The basic menu options might be restricted by master***

- *PC Video Input Controls* only appear in the Main menu if the PC input is selected. See the PC Input Video Controls entry in the "Main Menus " section for more information.
- *The clone box may have disabled master menus.*
- *Sleep and Schedule functions won't work if TV Power Config is set to Always.*

Forgot password

- Use the master remote to enter a new password.

Rating limits don't work

- You must lock the parental controls (from the Main menu, select *Parental Control*s then *Lock Parental Control*s.

Program is blocked and it shouldn't be

- It may be a Not Rated (NR) movie. After you block movie ratings, you must set NR to View separately in order to view movies with an NR rating (from the Main menu, select *Parental Control*s then *V-Chip Movie Rating Limi*t.
- It may be an un-rated television program. To unblock un-rated television programs, select *Parental Controls* from the Main menu, then select *V-Chip TV Rating Limit* and set *un-rated* to V.

Notes

Additional Information

www.service.tce.com (*Authorized Service Centers Only*)

or

www.thomsoncommercial.com.

Notes

Notes

This glossary is intended to familiarize the reader with common terminology and provide a reference for other industry terms.

A-to-D Converter (ADC)
An electronic component used to convert analog signals to digital.

Aliasing
Undesirable video display effect caused by excessive high frequency information. The results are "jaggies" or a stairstepping effect of slanted lines and fonts.

Alignment
The process of adjusting an electronic circuit to obtain maximum performance.

Amplification
The process by which the strength of a signal is increased.

Amplifier
An electronic device used to increase the strength of a signal.

Analog
A system in which signals vary continuously in contrast to a digital system in which signals vary in discrete steps.

Anti-aliasing
The process of reducing the aliasing effect. Usually involves placing a gradual gradient from the slanted line color to the background color to "smooth" the jaggies.

Aspect Ratio
The ratio of television screen width to height. The standard aspect ratio is 4 to 3. In computer jargon, television screen size is 768 x 576 pixels including overscan, although actual viewing screen resolution is normally considered to be 720 x 484. High Definition broadcasts will normally be closer to a 16 X 9 format.

ATSC
The U.S. *A*dvanced *T*elevision *S*ystem *C*ommittee.

Audio
The sound portion of the television signal.

A/V Cables
Audio/Video Cables carry the baseband audio and video output signals demodulated from the RF channel received by the tuner.

Baseband Video
The composite NTSC standard signal that contains all the color and black/white information needed to produce normal video on a television screen. The baseband signal originates at the production facility or studio and later modulated, or mixed, onto a channel carrier for transmission over broadcast, cable, MATV or SMATV systems. The receiver or television must then strip off the channel carrier, leaving the original composite signal.

CAV (Component Analog Video)
Analog video format in which three separate video signals (RGB), are combined to represent luminance (Y) and color (C) information.

Chipper Check™
Computer interface and software that allows alignment and reinitalization of the television via personal computer.

Chrominance (Chroma or "C")
The hue and saturation of a color. The chrominance signal is modulated onto a 4.43 MHz carrier in the PAL television system and a 3.58 MHz carrier in the NTSC television system.

Clone Box
A device used to program several commercial TV's by cloning.

Interlaced Scanning
A scanning technique to minimize picture flicker while conserving channel bandwidth. Even and odd numbered lines are scanned in separate fields that, when combined, paint one frame of complete picture. The effect is the picture is divided into two separate pictures, the odd lines and even lines. Both must be recombined to present a proper picture. See Progressive Scanning.

Luminance (Y)
The measurable, luminous intensity of a video signal. Color video picture information contains two components: luminance (brightness & contrast) and chrominance (hue & saturation).

MATV
Master Antana Television

MCR
(Remote-control module) mounted inside the television, used as an interface between the TV and an external controling device.

Micro, microprocessor, uP, microcontroller
The system control device of a television receiver.

Monochrome
A black and white television picture.

NTSC
The National Television Standards Committee which created the standard for North American TV broadcasts.

PAL
Phase Alternate Line. The European color TV format which evolved from the American NTSC standard.

Pendant
A wired remote control used in controlling commercial TV's. There are two kinds of pendants, SMART and DUMB.

PDP
Plasma Display Panel

Phosphor
Material that emits light when excited by radiant emergy.

Pixel
"Picture element" or "pel." A pixel is a digital sample of the color intensity values of a picture at a single point.

Plasma display
A display that uses ionized gas to produce light.

Progressive Scan
Method of picture scanning with one horizontal line immediately following the one before. See Interlaced.

PRP
Patient Remote Pendant

PWB
Printed Wire Board

RGB
Red, Green, Blue. The primary additive colors used to reproduce the color signal in color television.

RS-170A (ANSI/SMPTE 170M)
Composite Analog Video standard detailing the matrixing of RGB video signals onto one of two color difference signals: Y, B-Y, R-Y or Y, I Q.

Scan Converter
A device used to convert scan signal from one format to another.

SDTV (Standard Definition Television)
Term used to signify a *digital* television system (DTV) in which the quality is approximately equivalent to that of analog NTSC. This equivalent quality may be achieved from pictures sourced at the 4:2:2 level of ITU-R Recommendation 601 and subjected to processing as part of the bit rate compression. The results should be such that when judged across a representative sample of program material, subjective equivalence with NTSC is achieved. Also called standard digital television. See

SECAM (Systeme Electronique Pour Colour Avec Memorie)
French developed broadcast standard.

Signal Conversion
The process of taking a signal at one frequency or a specific carrier frequency and changing it to another.

SMATV
Satelite Master Antenna Television

S-Video
Split or Separated Video. Video output technique separating the color from the black & white information to improve picture quality.

SVGA
Super Video Graphics Adapter

Terrestrial
Originating from the earth, as in terrestrial broadcast. This would refer to a normal over-the-air broadcast signal as opposed to a satellite-based signal.

UTC
Universal Time, Corrdinated **(zulu or Greenwich Mean Time, GMT)**

VGA
Video Graphics Adapter

Y/C

Commonly referred to as "separate video" or "S-Video". A video signal containing a separate Y (luminance) and C (chrominance) signal. The Chroma signal is normally modulated at 3.58 MHz. In video tape recording it may be at 688 MHz (3/4" & Beta) or 627 MHz (VHS).

YIQ

NTSC video signal standard for normal transmission. The original RGB signals are combined this way. Y=luminance, the black and white component with sync produced by combining 30% Red + 59% + 11% Green. I=60% Red - 28% Green - 32% Blue, Q=21% Red - 52% Green + 31% Blue. The I&Q signals are modulated onto a 3.58MHz subcarrier for transmission. The receiver must then demodulate the subcarrier back into the original I & Q signals necessary to decode the original RGB levels. (See also RS-170)

YUV

Luma and Chroma difference components normally recognized as a PAL video signal standard where Y=Luminance, U=Red-Y, V=Blue-Y. These signals can be recombined to form RGB video. Generally cleaner than other methods requiring some frequency conversion of the separate color and luminance signals.

Y, C1, C2

A general set of CAV signals. Y is the luma signal, C1 is the first color difference signal and C2 is the second.

Y, Cb, Cr

Digital expression of the color difference signals. Cr is the digital interpretation of R-Y, while Cb is the digital interpretation of B-Y.

Y, Pb, Pr

Analog expression of the color difference signals. Pr is the equivalent to R-Y, while Pb is equivalent to B-Y.

Y, R-Y, B-Y

The general set of CAV signals used for some encoder/decoder systems in PAL and NTSC systems. Specifically, Y is luminance, R-Y is the first color difference signal and B-Y is the second. Y,Pb,Pr is a version of this system. (See also RS-170)

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